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forest extension, and Mr. L. D. Cox, formerly landscape architect to the Park Commission of Los Angeles, as assistant professor of landscape engineering.

SIR HENRY MIERS, formerly professor of mineralogy at Oxford, has resigned the principalship of the University of London to become vice-chancellor of Manchester University.

MR. L. G. OWEN has been appointed professor of mathematics at the Government College, Rangoon.

DR. RUDOLF HÖBER has been made professor of physiology at Kiel, in succession to Professor A. Bethe, who has accepted a call to Frankfurt.

DISCUSSION AND CORRESPONDENCE

A TYPICAL CASE

PROFESSOR —— graduated at —— University and, taking a post-graduate course, received the degree of Ph.D. He then went abroad, studied at the —— University, and returned to America, full of enthusiasm for original research. He had published an important memoir for a thesis, which was well received, his instructors encouraged him and his fellow students appreciated and were interested in his work.

He now received an offer of a professorship in a small country college, married, and began his new life expecting to continue his investigations. He soon found that his entire time was occupied in teaching, and that he was obliged to eke out his small salary by writing and lecturing. He could not bear to abandon his great object, the advancement of human knowledge, and found that he could, by extra efforts, devote a portion of his evenings to research, amounting to a fourth of his entire working capacity. He went to the president of the college, asking for an appropriation for an assistant, who could do the routine work of copying, computing, etc., as well and as rapidly as he could himself. Instead of a quarter of his time, he would thus have one and a quarter, or five times as much, and could make rapid progress at small ex-

pense. The president told him that the object of the institution was teaching, not research, and that it was impossible to grant his request. A fellowship was, however, vacant, and might answer his purpose. This, however, would be of no use to him, as the fellow would not want to do routine work, but to undertake a research of his own, and would expect to be taught how to do it. His associates were teachers, not investigators, and took no interest in his plans. After repeated trials and discouragements, he abandoned his efforts and settled down as a teacher only, with no ambitions beyond enabling his classes to pass their examinations.

While good teachers are as much needed as investigators, the work of the latter may be greatly impeded if their main energy is devoted to instruction. The finding of such men, and enabling them to carry on the great work, for which they are fitted, by providing them with apparatus, assistants, or means for publication, is one of the principal objects of the Committee of One Hundred on Scientific Research.

EDWARD C. PICKERING

January 27, 1915

A SPHENOIDAL SINUS IN THE DINOSAURS

THE work which has been done recently on the accessory nasal sinuses in man and the mammals by H. W. Loeb, J. P. Schaeffer, Onodi, Ernst Witt, Ritter, A. W. Meyer, as well as the earlier work of Zuckerkandl, may receive some interesting additions from paleontology. While in no sense intending to affirm any genetic relations between the dinosaurs and mammals it is yet an interesting fact that a large sinus occurs in the sphenoidal region of dinosaurs and labyrinthodonts. It has previously been largely confused with the pituitary fossa near which it lies but recent work tends to show a distinction between this fossa for the lodgment of the hypophysis and the *recessus basisphenoidalis* as it is called by Osborn¹ who has figured this cavity very clearly in *Tyrannosaurus rex*, the huge carnivorous dinosaur from the Cretaceous. The

¹ Osborn, H. F., 1912, *Mem. Amer. Mus. Nat. Hist.*, N. S., Vol. 1, Pt. 1, Pls. III. and IV.

cavity in this dinosaur is quite extensive and corresponds in position to the human sphenoidal sinus and resembles this structure in some of its complications such as are occasionally found in man. The structure seems to occupy portions of both the basisphenoid and the basioccipital and to extend a considerable distance toward the occipital condyle. There are five, possibly six, saccular divisions of the sphenoidal sinus (*recessus basisphenoidalis*). These divisions recall the saccular divisions of the sphenoidal and frontal sinuses of man and from their smooth walls one would expect to find a membranous lining as in man. So far as I am aware this cavity has no connection with the nasal cavity, although such a connection may be demonstrated from additional or from a restudy of present material. The recess lies below and between the points of exit of the third and twelfth cranial nerves, the mass of the brain being immediately above it. Several authors have observed a similar depression in the sphenoidal region of the Labyrinthodont skull and in other primitive vertebrates, notably the early reptiles. It is a well known fact that the hypophysis and particularly the posterior portion of this structure is, in the early land vertebrates, quite large and it has been the natural assumption that the large recess near where the hypophysis occurs should lodge the glandular organ, but it is entirely probable that the recess is the sphenoidal sinus. There is no necessity of adopting Osborn's term *recessus basisphenoidalis* since there is no doubt that the structure corresponds well with the *sinus sphenoidalis* of man. It is to be hoped that someone will take up the question of the general homologies of these cavities in different groups of vertebrates so that we may have a firm basis on which to work. The value of fossil animals in furnishing facts of anatomical importance has never been fully realized and it is to be hoped that an attempt will be made to fill this gap.

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SCIENTIFIC BOOKS

Human Physiology. By PROFESSOR LUIGI LUCIANI. In four volumes; Volume II. Translated from the Italian by FRANCES A. WELBY. London, 1913.

The realm of physiology has become so extensive that the preparation of an encyclopedic treatise on the subject by a single author is a notable intellectual feat. The admirable manner in which Luciani has accomplished this feat in his *Fisiologia dell' Uomo*, is testified to by translations which have been made into both Spanish and German. Not only does the book include a review of recent and generally accepted observations and interpretations, but also in many subjects an account of the historical development of our knowledge from ancient to modern times. The reader is thus given a perspective which is rarely obtained except by particular historical research.

A very considerable part of the value of Luciani's great handbook arises from his generous citation of original sources, both old and recent. This feature gives the exposition a permanent utility for the careful student who desires to become acquainted with reports by the discoverers themselves. Such a student should not depend wholly on English and German references to literature; he would do well to examine also French and Italian summaries, for, it must be admitted, there are not infrequently possibilities of tracing work thus which has not been represented where we have been most accustomed to look. Luciani's bibliographies present a rich mine of references to Italian as well as to other original papers.

The present volume (number II. of the four volumes of an English translation) is a good example of the whole. It is concerned with the internal secretions, the digestive secretions, the processes of digestion both mechanical and chemical, absorption and excretion. Many of the illustrations are taken from the original investigations, and a number of them are colored. The chief criticism that can be made against the work is that during the time required for its writing and being translated physiology has been going